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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/701,065	02/12/2001	Fabrice Geiger	2013/TCG?PMD/LE	7160

7590 05/21/2003

Patent Counsel, MS/ 2061
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EXAMINER

DUDA, KATHLEEN

ART UNIT

PAPER NUMBER

1756

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/701,065

Examiner

Kathleen Duda

Applicant(s)

GEIGER ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 12-15 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 is/are allowed.
- 6) ☒ Claim(s) 1-10 and 16-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10. 6) ☐ Other:

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed March 31, 2003, fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language (DE195 28 746). The reference has been placed in the application file, but it has not been considered.

Election/Restrictions

2. Claims 12-15 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 8.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Hieber (US Patent 5,399,389).

Hieber teaches depositing a planarized layer on a structured silicon substrate (column 4, line 55 to column 5, line 45). The deposition occurs by providing precursors having different growth rates on different surfaces at different levels (abstract). It is taught that the layer is CVD using ozone/TEOS (column 5, lines 23-34). The pressure is 0.1-3 bar (75 to 2250 torr) and at a temperature of 300-500° C (column 5, lines 36-46). It is taught that slower growth occurs on higher surfaces.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 16-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hieber (US Patent 5,399,389) in view of Jang (US Patent 5,786,262) and Cox (US Patent 5,851,927).

The teachings of Hieber have been discussed above. Hieber does not teach the formation of the trenches by photolithography and the use of an ARC in the process. Jang teaches the formation of trenches photolithographically and Cox teaches the use of an ARC in photolithographic processes.

Jang teaches a process of filling trenches with an ozone-TEOS layer. The figures and column 3, line 55 to column 4, line 25, teach the process. A silicon substrate 2 has a silicon dioxide 4 and silicon nitride 6 layers. It is taught that a photoresist layer is applied and used to etch the substrate to form the trenches 10 (column 3, lines 55-56). The ozone-TEOS layer 12a is then formed. Planarization of the layer occurs using the silicon nitride layer 6 as an etch stop.

Cox teaches the use of silicon nitride as an antireflective layer in a photolithographic process. Column 1, lines 47-52, teaches that silicon nitride reduces unwanted reflections during exposure of the photoresist layer.

Therefore, it would have been obvious to one of ordinary skill in the art to have filled photolithographically formed trenches with ozone-TEOS and then planarized because Jang teaches forming trenches which are then filled with ozone-TEOS using a silicon nitride layer. Cox teaches that it is conventional in the art to use a silicon nitride layer in photolithographic

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processes with the expectation that the silicon nitride will function as an antireflective layer during exposure.

Allowable Subject Matter

7. Claim 11 is allowed. Claim 11 recites a memory coupled to the controller which is not taught or suggested by Cheung.

Conclusion

8. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on March 31, 2003, prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609(B)(2)(i). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

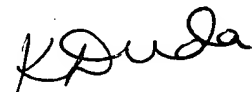
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

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advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication should be directed to Examiner K. Duda at (703) 308-2292. Official after final FAX communications should be sent to (703) 872-9311, all other official FAX communications should be sent to (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist at (703) 308-0661.

A handwritten signature in black ink, appearing to read 'K Duda', is positioned above the printed name.

Kathleen Duda
Primary Examiner
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